

**IS THE SIGNALING EFFECT OF DIVIDEND CHANGES ANNOUNCEMENT MORE
IMPORTANT IN VOLATILE TIMES?**

by

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Abstract

This paper examines the signalling effect of dividend changes with a focus on how investors react to dividend changes during volatile markets. The signalling effect should be associated with the perceived information asymmetry between corporate insiders (i.e., managers) and the general public. The question is, does this asymmetry increase or decrease during uncertain times? Do managers really know comparatively more (compared to regular investors) about the future in uncertain times, or do the differences reduce because it is associated more with a systematic type of risk? My research shows that investors, in general, are more sensitive to dividend increase than to dividend decrease. Also during volatile markets, investor decision making is sensitive to dividend change announcement and the signaling effect of dividend changes during volatile markets is a function of dividend change announced.

Keywords: Dividend changes, Signaling effect, Dividend disappearance phenomenon

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1: Introduction

Interest in dividend change policy was first expressed by Lintner back in 1956. In his work, based on the survey of 28 managers, Lintner found that companies make their decision to increase their dividends only if management is confident that they will be able to maintain the same level of dividends without having to reverse their decision. Actually, this finding was proven to be persistent almost fifty years later by Grullon, Michaely and Swaminathan (2002) when they found that the payout ratio for dividend-increasing companies increases permanently. This suggests that these companies, in actual fact, were able to maintain the same level of dividend in the future.

Jensen's (1985) Free Cash Flow Theory was one of the first theories explaining the management decision of dividend increase. He suggests that executives make their decision regarding dividend payments based on the free cash accumulated by the company to reduce potential agency conflict. Miller and Rock (1985) explain that dividends increase, is not only driven by the present excess cash, but also conveys information about future company cash flow. Dividend increases or decreases would convey good or bad news respectively about the company, and their finding suggests a positive relationship between dividend changes and the price reaction to these changes.

Dividend signalling models indicate that unexpected changes in dividends convey information regarding the level of current and future cash flows (Miller and Rock (1985)). Christie (1987) found that consequent changes in the company's market value surrounding dividend announcement are directly proportional to the unexpected dividend and excess return around dividend announcements and will be functions of the unexpected changes in dividend per share. Denis, Denis and Sarin A. (1994) simultaneously tested for the standardized dividend changes, dividend yield, and

Tobin's Q and found that announcement period excess returns are positively related to the magnitude of the standardized dividend changes and to the dividend yield.

Grullon, Michaely and Swaminathan (2002) looked at the companies increasing or decreasing their dividends in a longer time frame and their findings challenge the previous theories suggesting that an increase in dividends are usually followed by a decrease in earnings in the next two years. They believe that a positive market reaction to a dividend increase can be attributed to the subsequent reduction in systematic risk. For dividend increasing firms the changes in systematic risk translate to a decline in a risk premium of 1% a year, while for dividend decreasing firms the changes in systematic risk translate to an increase in a risk premium of 2% a year. The magnitude of decline in risk following an announcement of a dividend increase will trigger a more positive market reaction, which will be reflected in the stock price. Furthermore, Grullon, Michaely and Swaminathan claim that an increase in dividends convey information about changes in a company's life cycle, when a company transitions from a high growth stage to a lower growth stage, when the maturity stage has taken place. This finding is consistent with Lintner's (1956) idea that dividends are paid by mature companies.

Brav, Graham, Harvey and Michaely (2005) conducted interviews with 23 financial executives and surveyed 384 managers to determine factors driving dividend decisions. They found some evidence supporting Jensen's theory, as well as Lintner's conclusion that, dividend policy is affected by perceived stability of future earnings. Managers still believe that dividend policy and changes in it convey information to investors. However, they found that executives do not use dividend payments as a costly signal to investors and the link between dividends and earning has weakened over this time.

Fama and French (2001) presented the disappearing dividends phenomenon and showed that since 1978 the proportion of firms paying dividends dropped three times from 66.5% to 20.8%. Furthermore, they showed that publicly traded companies have become less likely to pay dividends regardless of their characteristics.

Amihud and Li (2006) suggest that the decline in the information content of dividend announcements can be used as an explanation for the disappearing dividend phenomenon. This decline in the information content can be attributed to the increasing level of sophisticated and informed investors, such as institutions. They believe that knowing about this decline in information, firms will want to save the dividend-related costs for other company needs and reduce the use of dividends to convey information to investors. Signaling effect of the dividend announcement still exists, but is weakening over time, as the previous research suggests.

Dividend announcements provide information release for the investor. Miller and Rock (1985) state that in our world, investors take dividend announcements as a clue to unobserved earnings. Thoroughly documented evidence of a dividend-announcement effect clearly implies asymmetries of information between the investing public and a firm's decision makers. Managers should normally have an advantage over the market in predicting firm-specific events, which create an information asymmetry between the managers of a firm and the market (Dierkens (1991)). Dierkens research shows that information asymmetry is a significant variable in equity market.

Research has been done exploring the information asymmetry in companies specialized in R&D. Aboodi and Lev (2000) show that companies with unique R&D, i.e., developing radically new drugs or software program, have the highest information asymmetry. The problem is that investors can derive little or no information about the value of these firms' R&D from observing R&D performance of other firms. Furthermore, Xu (2006) investigated the effect of R&D progress in the bio-tech industry on the stock price volatility and found that managerial release information about R&D progress have a decreasing effect on a stock price volatility.

In this paper, my intention is to test the relationship between a dividend change announcement and corresponding stock return changes and to see if a dividend announcement signaling effect weakens over time. My empirical research supports both of these statements; I have found a strong positive relationship between the announcement of dividend increase and the corresponding stock return increase and

negative correlation with a time variable. I have also found that investors react differently to dividend increase and dividend decrease announcements. They are more sensitive to a dividend increase while a dividend decrease does not initiate a huge investor reaction.

I am interested in exploring if the signaling effect of dividend changes becomes stronger during volatile times. The question is, do investors trust managers to know more about a company's current earnings and therefore does information asymmetry increase during volatile market or are managers as confused as investors when the market becomes uncertain? Previous studies explored the effect of information asymmetry for companies doing R&D in the innovative industries, such as bio-tech and software development. My interest is to see if the information asymmetry in general increases during volatile times and has an effect on the abnormal stock return.

This issue is drawing special attention at the moment given the current extreme market volatility. The general intuition is that investors should pay more attention to managers' decision to change dividends during uncertain times. My research shows that when times become uncertain, investors do perceive managers as being more knowledgeable than themselves and that there is a positive relationship between a dividend change announcement and an abnormal stock return.

2: Data for Research

For this project daily data was obtained from the Center for Research in Security Prices (CRSP) database starting from January 1976 up to December 2008. I have included all the companies, which were trading within the mentioned time period and declared their dividends. Dividends are assumed to be paid once per quarter and the declaration of these dividends is supposed to be announced within the same quarter.

Some companies make a number of the differing announcements regarding their dividends payments within the same day. In these cases, I summed up these amounts to reflect the entire amount of dividend which was paid out. A few companies pay dividends every month. To be consistent I included only one payment per quarter using the highest amount within this quarter. When all payments are equal I used the last amount per each quarter to avoid the situation when announcement and payment are happening in the different quarters and to insure that this project would include as many possible valid observations. Some companies didn't record the date of dividend announcement; as a result I wasn't able to trace the effect of the particular announcement on the daily market return.

For each dividend announcement, I am interested in the stock return for the corresponding day and the consecutive trading day in each quarter. The time of the announcement is unknown, so if a dividend payment was announced at the end of the day the effect on the stock return could be seen on the next trading day. For my research, I used the averaged result for these two days and I removed the market return portion by deducting the value-weighted return for each of these days.

Now, because the focus of this project is the change in dividend announcement, I was looking for the differences between consecutive quarters, if any, and divided it by

the dividend amount for the earlier quarter, so the percentage change can be used for the future analysis.

As a result, I have 75367 observations to work with and out of this 51807 represent a dividend increase and 23560 represent a dividend decrease.

3: Research Results

First, I looked at the relationship between an excess return over two consecutive days for the announcement day and following day, and the announced dividend change. The excess return is calculated as the difference between the stock return and value-weighted market return. The following equation was used for the regression:

$$r_i - R_m = \alpha + \beta * DIVCHANGE_i$$

where:

- r_i - stock return,
- R_m - value-weighted market return,
- $DIVCHANGE_i$ - percentage dividend change

Running the regression, I obtained different results with respect to different input. For overall dividend change:

$$r_i - R_m = 0.00111 + 0.0078 * DIVCHANGE_i$$

(t=) (33.72) (29.09) $R^2 = 0.0058$

Dividend increase:

$$r_i - R_m = 0.00237 + 0.0078 * DIVCHANGE_i$$

(t=) (23.95) (16.91) $R^2 = 0.0089$

Dividend decrease:

$$r_i - R_m = 0.00057 + 0.0031 * DIVCHANGE_i$$

(t=) (3.19) (5.31) $R^2 = 0.0012$

These results show the strong relationship between a dividend change announcement and an abnormal return. I also have found that the relationship with a

and in the next regression HIGHVOL represents market on a quarterly basis:

$$r_i - R_m = 0.00234 + 0.00899 * DIVCHANGE_i - 0.00021 * TIME - 0.000132 * HIGHVOL$$

(t=) (26.98) (17.96)
(-8.87)
(-2.35)

$R^2 = 0.0125$

I have found that there is no essential difference in the effect of high volatility market between the yearly and quarterly analysis. Both of these regressions have a negative sign in front of market volatility, which can be explained using asset pricing model, that a contribution was provided by small companies. In addition, accordingly to Galai and Masulis (1976), their stock securities could include options, which are priced negatively in relation to an abnormal stock return.

I obtained the same result using the standard deviation for a particular period (VOL) instead of dummy variable (HIGHVOL) in the following regression:

$$r_i - R_m = 0.00261 + 0.00898 * DIVCHANGE_i - 0.00021 * TIME - 0.04542 * VOL$$

(t=) (14.28) (17.92)
(-8.88)
(-2.29)

$R^2 = 0.0126$

For my final test, I am incorporating one more variable in the regression, which represents the interaction term (INT) between the market volatility and dividend change for a particular stock multiplied by the standard deviation. In this equation can be used either market volatility variable or dummy variable, I used dummy variable HIGHVOL to represent high market volatility in general.

The analysis was done base on the yearly and quarterly volatility respectively in the next regressions:

$$r_i - R_m = 0.00237 + 0.00867 * DIVCHANGE_i - 0.00024 * TIME - 0.00036 * HIGHVOL + 0.16485 * INT_i$$

(t=) (27.18) (16.93)
(-10.63)
(-2.65)
(3.99)

$R^2 = 0.0131$

4: Conclusion

Within my paper supporting the dividend signaling model I discovered a strong relationship between the dividend change announcements and stock returns. It also became clear that the market reacts differently to a dividend increase compare to a dividend decrease announcement – the market is more sensitive and responsive to a dividend increase. I also looked into the dividend disappearance phenomenon introduced by Fama and French. My research provided evidence that, indeed, a dividend disappearance phenomenon is apparent over the period of 32 years covered in my paper and that this phenomenon is obvious on the dividend increasing side and not traceable on the dividend decrease side.

The major focus of this project was to discover whether there is a greater relationship between dividend change announcements and stock returns during a high-volatility market. My results indicate that this relationship is strong and robust during uncertain times. The signaling effect of a dividend change becomes stronger during market uncertainty and dividend change announcements convey more information to investors. Also the information asymmetry increases during volatile market, concluding that investors perceive managers as being more knowledgeable of a company's true financial position during volatile time.

In this paper I looked at the market overall and averaged investors' reaction to the management decision and that may reduce the effect. The results could be considerably different if companies would be divided into different groups by industry type as Baker and Powell (1999) suggested in their studies. They found that differences existed within the three industries that they explored. This could be explored in future research.

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